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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/967,084	09/28/2001	Niels Beier	42390.P12323	6640

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09/14/2005

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EXAMINER

WON, MICHAEL YOUNG

ART UNIT

PAPER NUMBER

2155

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

47

Supplemental Office Action Summary

Application No.

09/967,084

Applicant(s)

BEIER ET AL.

Examiner

Michael Y. Won

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 22-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 22-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment filed June 22, 2005.
2. Claims 1, 6, 8, 22, and 28 have been amended and claim 11 has been cancelled.
3. Claims 1-10 and 22-32 have been examined and are pending with this action.

Allowable Subject Matter

4. The indicated allowability of claims 6-7, 11, and 28-29 if re-written in independent form, is withdrawn in view of the newly discovered reference(s) to Kerr et al. (US 6,243,667 B1) and (US 6,661,799 B1). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 8, 9, 22-24, 26, 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kerr et al. (US 6,243,667 B1) in view of Molitor (US 6,661,799 B1).

As per claims 1 and 22, Kerr teaches a method and a machine-readable medium having stored thereon data representing instructions that, if executed by one or more processors of a network device, cause the one or more processors to perform the method comprising: receiving a packet at a network device (see col.3, lines 55-56), the packet including a header (see col.3, lines 58-59) and a payload (implicit); tagging the packet, by a first packet-processing application of a plurality of packet processing applications, with a cache lookup key based upon original contents of the header, the cache lookup key indicating where in a unified cache a cache entry corresponding to the packet will be stored (see col.3, lines 65-67; col.4, lines 8-11; and col.6, lines 32-41 & 50-53), the first packet-processing application modifying the header of the packet (see col.4, lines 58-60); and those of the plurality of packet-processing applications attempting to access the cache entry from the unified cache subsequent to the tagging by the first packet-processing application using the cache lookup key rather than generating a new cache lookup key based upon current contents of the header (see col.4, lines 1-7).

Although Kerr teaches of a tagging the packet (see above), Kerr does not explicitly teach of the first packet-processing application initiating a second packet-processing application of the plurality of packet-processing applications and providing the tagged packet to the second packet processing application. Molitor teaches of the

first packet-processing application initiating a second packet-processing application of the plurality of packet-processing applications and providing the tagged packet to the second packet processing application (see col.5, lines 52-55; col.7, lines 12-26; and col.8, lines 4-22).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teachings of Molitor within the system of Kerr by implementing a packet-processing application initiating another packet-processing application and providing the tagged packet to the another within the method and program stored on a machine-readable medium because the Internet (see Kerr: col.3, lines 3-5) comprises many application wherein data packets must be shared among the applications to perform the services required (see Molitor: col.5, lines 41-45).

As per claims 2 and 23, Kerr further teaches wherein said tagging the packet with a cache lookup key comprises populating a lookup key field of an internal packet descriptor corresponding to the packet with a hash value (see col.4, lines 8-11).

As per claims 3 and 24, Kerr teaches wherein the packet comprises an Internet Protocol (IP) packet and the cache lookup key is based upon a source IP address of the header, a destination IP address of the header, a source port of the header, a destination port of the header, and a protocol value in the header (see col.3, lines 3-5 & 58-65).

As per claims 4, 6, 10, 25, 27, and 28, Kerr teaches all the limitations including wherein the plurality of packet-processing applications includes applying packet filtering (see col.6, lines 50-53) and packet routing or forwarding (see col.1, lines 58-61), but

Kerr does not explicitly teach wherein the plurality of packet-processing applications includes applying one or more of Network Address Translation (NAT).

Molitor teaches of packet-processing applications includes applying one or more of Network Address Translation (NAT) (see col.4, lines 54-57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teachings of Molitor within the system of Kerr by implementing Network Address Translation (NAT) within the method and program stored on a machine-readable medium because Kerr teaches that in embodiments where the data packets are saved, it would be desirable to perform a name/address translation (see Kerr: col.10, lines 13-19) and Molitor teaches that NAT devices are usually placed in IP networks at border between two different address realms (see col.1, lines 16-19), borders such as edge routers.

As per claims 5 and 26, Kerr further teaches wherein the plurality of packet-processing applications are distributed among at least two processors of the network device (see Fig.1, #140 & #540).

As per claims 7 and 29, Kerr teaches of further comprising the second packet-processing application updating the cache entry with information specific to the second packet-processing application by using the cache lookup key to access the cache entry (see col.8, lines 45-47).

As per claim 8, Kerr teaches a method comprising the steps of a step for determining whether a cache lookup key is present in a packet descriptor associated with a received packet (see col.3, line 65-col.4, line 7); a step for performing a lookup in

a unified cache with the cache lookup key if it is determined that the cache lookup key is present in the packet descriptor (see col.4, lines 1-2); a step for creating a new cache entry in the unified cache based upon information in a header of the received packet and tagging the packet if it is determined that the cache lookup key is not present in the packet descriptor or the lookup does not locate an appropriate existing cache entry (see col.4, lines 2-5); a step for conveying the cache lookup key to a packet filtering packet-processing task (see col.6, lines 32-41 & 50-53); and a step for updating an existing cache entry with module-specific information (see col.8, lines 45-49).

Kerr does not explicitly teach of a NAT packet-processing task. Molitor teaches of a NAT packet-processing task (see col.4, lines 54-57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teachings of Molitor within the system of Kerr by implementing Network Address Translation (NAT) packet-processing task within the method because Kerr teaches that in embodiments where the data packets are saved, it would be desirable to perform a name/address translation (see Kerr: col.10, lines 13-19).

As per claims 9 and 30, Kerr further teaches wherein the unified cache is implemented as a hash table and tagging the packet comprises generating a hash value based upon at least a source address and a destination address in the header and storing the hash value in the packet descriptor (see col.3, lines 58-65; col.4, lines 8-11; and col.10, lines 41-48).

As per claim 31, Kerr further teaches wherein the network device comprises a router (see abstract and col.1, lines 18-19).

As per claim 32, Kerr further teaches wherein the network device comprises a switch (see col.1, lines 18-19).

Conclusion

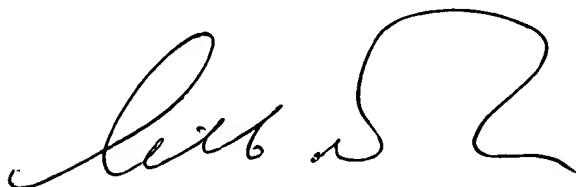
6. Based on further searching and consideration Molitor (US 6,661,799 B1) has been discovered to teach the missing elements of Kerr et al. (US 6,243,667 B1). For the reason above, claims 1-10 and 22-32 have been rejected.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Y. Won whose telephone number is 571-272-3993. The examiner can normally be reached on M-Th: 7AM-5PM.

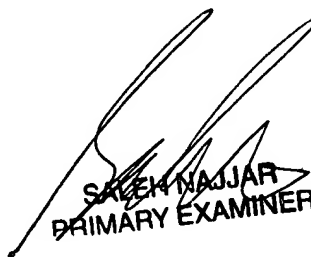
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Won



September 7, 2005



SALEH NAJJAR
PRIMARY EXAMINER